

Research on Optimization of Supply Chain Management of Private Publishing Companies under the New Development Philosophy Take the Dook Media Group as An Example

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Abstract: In recent years, with the participation of emerging technologies, multi-party capital competition, and changes in audience reading habits, the publishing environment has shaped a new "field", which revolutionized the production process and thinking paradigm of publishing. In this context, the optimization of supply chain management in the publishing industry can be regarded as a considerable measure to improve the quality and efficiency of the publishing industry. Combining the new development concept of "innovation, coordination, green, openness and sharing" with the supply chain management of the publishing industry, to discuss the optimization of the supply chain management of the publishing industry under the background of the new development philosophy.

Keywords: component, new development philosophy, publishing, supply chain management, the Dook Media Group

1. Introduction

As one of the most considerable sectors in the publishing field, private publishing companies have greatly promoted cultural communication and industry innovation. Under the guidance of Chinese new development philosophy with "innovation, coordination, green, open and sharing" as the core keywords, Chinese publishing companies need to deeply grasp the particularity of their dual attributes of culture and economy.

However, with the development of science and technology, changes in audience reading habits, expansion of distribution channels, participation in social media, and other factors, the publishing environment has shaped a new "field", which revolutionized the production process and thinking paradigm of publishing. The supply chain of publishing companies is no exception. New development opportunities require the supply chain to break away from the "habitation" of print media and move towards new fields. Dr.Martin Christopher, an internationally renowned supply chain management expert, once asserted: "The 21st century is not the competition between enterprises, but the competition between supply chains and supply chains", which also illustrates the importance

of supply chains for enterprise development. In the whole process of publishing, the supply chain mainly involves three links: space flow (logistics) as material textbooks, data flow (information flow) as information, and economic transfer (fund flow) in the entire transaction link. This article will combine the author's internship experience in the Dook Media Group as well as the company's existing technical framework and processing logic, under the overall layout of the new development concept, try to explore the "big problems" of the industry through "small incisions", and use synergy, etc. Related theories explore new initiatives in supply chain management.

2. Concept Clarity And Research Objects

The supply chain is an overall functional network chain structure, which revolves around the core enterprise and directly connects suppliers, manufacturers, distributors, retailers, and users through the control of information flow, logistics, and capital flow. From the procurement of raw materials to the production of intermediate and final products, which are delivered to consumers by the sales network. Supply chain management is an integrated management idea and method (Ma Shihua, Lin Yong, Chen Zhixiang, 2000). From the perspective of a single enterprise, it means that enterprises integrate and optimize information, transportation, and funds in the supply chain by improving the supply chain relationship, so as to gain a competitive advantage.

The supply chain also focuses on the relationship between supply and demand. The essence of enterprise supply chain management construction is to solve the problem of adapting the internal collaboration system to the external changeable environment. The current supply chain management mainly involves four aspects: (1) Information communication: In the concept of supply chain management, whether information can be quickly and accurately transmitted between enterprises at each node is a key evaluation indicator to measure the success of the supply chain construction. Information communication or the construction of an information platform is the core and main line of supply chain management thought. Ideally, barrier-free information sharing is the primary prerequisite for efficient supply chain operation. The control of funds, transportation, and information has been running through the entire process of the supply chain. In the industrial environment of big data, 5G communication, Internet of Things, and other technical conditions, as well as the industrial environment of virtual clusters of publishing companies, information communication is becoming more and more important in supply chain management, ushering in new challenges and opportunities. (2) Inventory management: The goal of inventory management is to reduce inventory, improve book turnover, and reduce business operating costs and risks. Reducing inventory is also the basic goal of supply chain management, and inventory reduction is a necessary condition for rapid and accurate communication of information. Using advanced information technology, enterprises can grasp the dynamic changes in market demand in a timely manner, communicate with enterprises at each node of the supply chain in a timely manner, and promote the destocking. (3) Cost management: The goal of supply chain management is to maximize benefits at the lowest cost. In order to pursue the lowest overall cost, it is necessary to continuously eliminate the processes that cannot create value increase in each node enterprise and reduce transaction costs. This is also the essence of supply chain management. (4) Relationship management: Relationship management includes customer relationship

and enterprise relationship of each node in the chain. Although customers are an essential resource for enterprises, modern supply chain management pays more attention to the cooperative relationship of enterprises. In a supply chain network, various nodes both cooperate and compete. Strengthening enterprise supply chain management can achieve the goals of information sharing and cost reduction, thereby enhancing the overall competitive advantage, and correspondingly, the interests of each enterprise will also increase.

Founded in 2006, the Dook Media Group has a relatively significant brand influence in the Chinese book industry, and its marketing model and production method are in a leading position. Books such as "The Tibetan Code", "The Godfather", "The Silk Road" and other books with millions of sales have been released in succession. In addition to the book industry, it also operates new media content such as "The Book List is Coming" and "The Movie List is Coming". At the same time, the company also develops overseas copyright export, knowledge payment, film and television drama, animation and game adaptation authorization and other operating businesses.

3. Current Situation of Supply Chain Management of Publishing Enterprises

While the publishing industry refines the division of labor, the supply chain network is expanding. The pervasiveness of technological engagement has profoundly reshaped the production logic of publishing. On the one hand, Virtual Reality (VR) and Augmented Reality (AR) enrich the published content. On the other hand, technologies such as big data, blockchain, and artificial intelligence are deeply involved in the publishing process, which has a significant impact on the publishing supply chain and its management. The enrichment of content attributes has increased the front-end nodes of publishing production. Technology companies and AR modeling companies have become participants in publishing content production. The advent of big data and social media has expanded the publishing downstream and distribution. On this basis, there are more and more nodes in the supply chain network of the publishing process. Compared with the traditional publishing supply chain "Fig. 1&2", the publishing supply chain in the new environment is more complex and systematic. In such an ecosystem, publishing as a core enterprise is crucial to the supply chain management of its upstream and downstream enterprises. American economist Evans believes that "supply chain management is a model that connects suppliers, manufacturers, distributors, retailers, and end-users into a whole through feedback information flow and feedback logistics and information flow". (Steven , Graham. (1985) . The core of supply chain management is to create value for customers by coordinating and optimizing each link in the supply chain, and ultimately maximize the benefits of the entire supply chain (Ma Shihua , 2010).

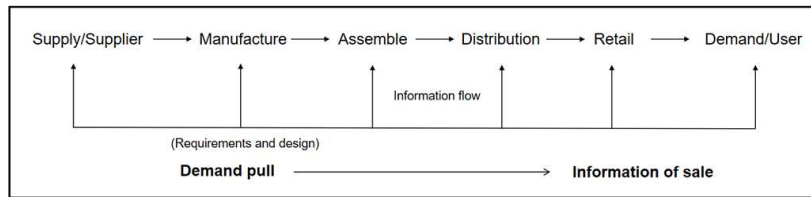


Figure 1 Publishing enterprise supply chain logic

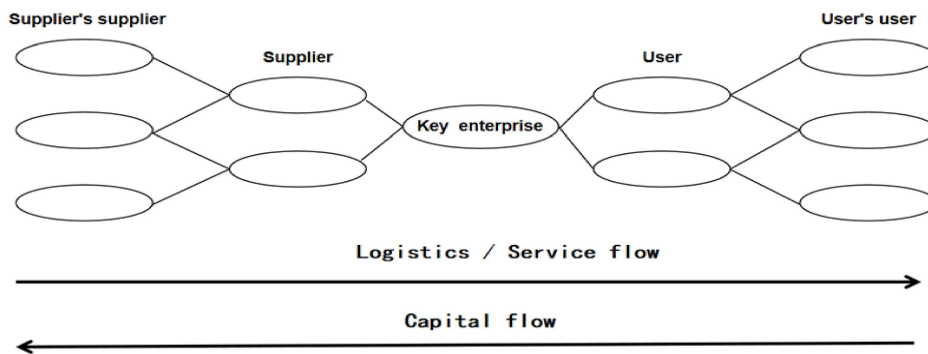


Figure 2 Publishing enterprise supply chain process

Due to the dual attributes of culture and economy in the publishing industry, the management of the supply chain of publishing companies must firmly grasp its characteristics. Specifically, the supply chain management of publishing companies has the following characteristics: (1) Industrial subdivision brings an increase in nodes, and information space and physical space reshape the publishing supply chain. The publishing industry supply chain has developed from a traditional linear structure to a network structure. Publishing companies, mid-market wholesalers, and retail companies in the supply chain have grown larger, and each has penetrated each other's territory. For example, publishing companies set up their distribution systems, and consumers can buy books directly from publishing houses. Intermediaries have increased control over the retail chain by establishing logistics and information centers. Retail companies can purchase goods directly from publishing houses without going through the publishing companies. In addition, with the diversification of publishing forms, the supply chain of the publishing industry has gradually become more complex. (2) The publishing industry supply chain has both the characteristics of the pull supply chain and the push supply chain. The content planning and first edition printing and distribution of publishing institutions are mostly based on experience or market demand forecast, which reflects the characteristics of the push supply chain. However, when the publication is republished, it is carried out according to the market reaction, which has the characteristics of a pull supply chain. (3) Internal management of publishing enterprises. With the development of publishing industry and the deepening of market competition, the operating resources of a single enterprise are not enough to ensure that the enterprise maintains its advantages in the rapid development. To reduce operation and management risks and maximize benefits, supply chain enterprises must seek cooperation (industrial clusters) with other

enterprises, and ultimately achieve full sharing and effective integration of publishing resources.

As a private publishing company well-known for its marketing and book formats, the Dook Media Group also has a separate supply chain department in its corporate structure, which is responsible for the overall management of the company's logistics and upstream and downstream supplier relationships “Fig. 3”. In the actual supply chain management, the Dook Media Group realizes the overall management of information flow, logistics, and capital flow of its publishing production process through self-built Enterprise Resource Planning (ERP) system. Specifically, the supply chain management of the Dook Media Group has the following characteristics:

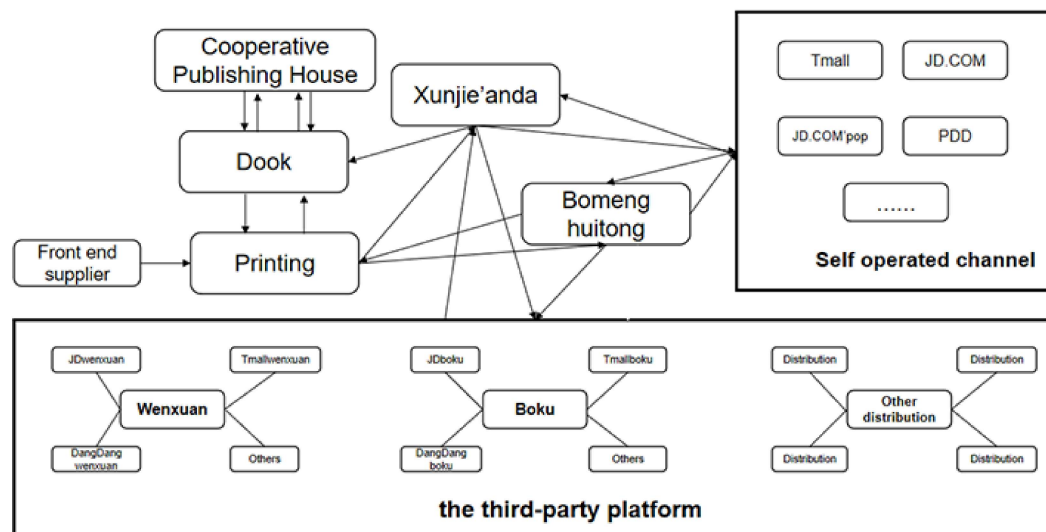


Figure 3 Supply Chain of the Dook Media Group.

3.1 The reciprocal supply chain model is emerging, and the shared warehouse has been maturely used

Each node in the supply chain will establish its own sub-supply chain system around its own core business. The management of the supply chain should not blindly benefit the publishing companies in the core position but should be a mutually beneficial relationship. Only when each node has a unified concept and coordinated work, can the production capacity of each node be maximized, thereby maximizing the efficiency of supply chain operation. With the help of an independent ERP system and mature cross-regional deployment capabilities, the Dook Media Group mainly has two shared warehouses: Bomeng Huitong and Xunjie Anda. At present, the existing sales channels are mainly self-operated and the third-party platforms. Among them, self-operated channels such as Tmall and JD.com rely on two shared warehouses, while the third-party platforms mainly rely on other companies in the supply chain to build warehouses.

3.2 Preliminary application of artificial intelligence to relieve operational pressure to a certain extent

Some new technologies such as artificial intelligence and machine algorithms have been reflected in the ERP system of the Dook Media Group. Through the synchronization of keywords and the inventory system, some books that have been discontinued, republished, or whose copyrights have expired can already be automatically identified by the system for order interception, and some unnecessary data can be intercepted for the relevant issuers in advance, so as to relieve the pressure of operators and improve work efficiency. But this AI-involved supply chain management is still mechanical and low-level. Because the current recognition technology is only based on the recognition of keywords, coupled with the constraints of the network and other related operating environments, there is still an error rate in actual operation.

3.3 The industry synergy is poor, and there are still obstacles to information communication

The so-called coordination refers to the ability to coordinate two or more different resources or individuals to accomplish a certain goal. The production of publication runs through a series of processes such as topic selection, market evaluation, and feedback. There are many production nodes and personnel involved, but in the current management system, there is still no effective communication mechanism. In the Dook Media Group's ERP system, information communication is still the biggest barrier to supply chain collaboration. The information dissemination channel is blocked, which leads to the information difference at each node, which poses a great challenge to the healthy development of the entire supply chain.

4. Problems in Supply Chain Management of Publishing Enterprises

In the actual supply chain management, the Dook Media Group realizes the overall management of information, logistics, and funds of its publishing production process by building its ERP system. However, in actual operation, there are still some problems due to the obstacle avoidance of the system itself. Specifically:

4.1 "Late arrival" of information: data synchronization lags

Information communication or the construction of an information platform is the core of supply chain management thought. Barrier-free information communication and data exchange is the premise and key factor for the efficient operation of the supply chain. The main information involved in the supply chain management of publishing companies are fixed numbers, addresses, codes, logistics, inventory, etc. These are often the key indicators of the operation of publishing companies. At present, the Dook Media Group's self-built ERP system can dynamically update and synchronize its

warehouse's real-time inventory, but there is still a one or two-day time difference between logistics information and sub-warehousing. It is precise because of this time difference that the actual delivery situation of the sales department will not match the quantity demanded by the warehouse. If the quantity of goods is insufficient, it will lead to the phenomenon of out-of-stock for distributors. The online store can only be removed from the shelves, which seriously affects the distribution of publications. If the quantity of goods exceeds the warehouse demand, it may cause a backlog of goods inventory, and logistics costs will skyrocket. In addition, the entire ERP system focuses on the production process of new books, but because of the dual nature of the supply chain of the publishing industry, it is also necessary to pay attention to the data of reprinted books and reprinted books. At this point, there are many problems in the maintenance of page information, the release of platform pages, and the tracking of logistics.

4.2 The absence of sharing methods: various platform standards

The Dook Media Group's distribution channels are mainly divided into online and physical stores. Online stores are mainly self-operated or intermediary platforms such as Dangdang, JD.com, Xinhua Wenxuan, Boku, and Tmall. Offline words are mainly distributed through Xinhua Bookstore and other distribution systems. Although the Dook Media Group has built its own distribution system, it is still necessary to log in to third-party platforms such as Xinhua Wenxuan and Boku systems for order maintenance and data update during distribution. Due to the incompatible data formats and standards between platforms, when maintaining the platform, it is often necessary to download the relevant data in advance for manual maintenance and delivery, and then synchronize the self-built ERP system to complete the entire distribution process. In this way, the issuance procedures are complicated, and errors are prone to occur due to manual processing, which will lead to "stocking" at the end of each month, and it is necessary to check the third bill in detail with the relevant data of its own ERP system. This invisibly increases the workload of the relevant personnel, and also affects the efficiency of the entire distribution process.

In addition to the delivery link, new book uploads will also face such problems. Different platforms have different standards for new book data, which leads to a new operation every time a platform is uploaded. It is difficult to achieve synchronous release, which seriously affects the user experience and productivity of publishers.

4.3 Weakening of innovation: new situation and old ideas

The "bullwhip effect" is a phenomenon of demand variation amplification in the supply chain. When information is transmitted from the client to the original supplier, the lack of effective sharing makes the information distorted and amplified step by step, resulting in huge fluctuations in demand (Yang Jun, 2007). The operation logic of the ERP system built by the Dook Media Group still tends to be traditional, and it is slightly slow to connect with new technologies. The biggest resistance, it not only seriously affects the operational efficiency of the supply chain, but also leads to the backlog of finished products and slow inventory turnover, which directly affects the operation of the capital chain

5. Supply chain management under the new development philosophy

The "Innovative, Coordination, Green, Open, and Share" advocated by the new development philosophy actually highly overlap with the requirements of publishing supply chain management. For the management of the publishing industry chain, "Innovation" is the participation of innovative concepts and new technologies; "Coordination" is the deep implementation of collaborative management awareness; "Green" is the positive distribution of input and output; "Open" is the expansion of overseas resources and markets for China's publishing industry; "Share" is the sharing of books and the unification of standards in the publishing supply chain to maximize the efficiency of publishing.

5.1 Innovation and openness empowered by technology

The participation of artificial intelligence in the publishing process provides new ideas for publishing supply chain management. Artificial intelligence can continuously adjust human, financial, and material resources to meet the needs of the market by analyzing data at various stages. For example, authors, publishers, logistics centers, sales channels, and other nodes in the publishing process can respond flexibly and actively to readers' needs. With the improvement of network communication technology (5G) and artificial intelligence, the response time of automatic adjustment and machine planning based on computing systems is getting shorter and shorter, and tends to "instant answer". Based on book sales data, artificial intelligence can help bookstores establish a complete book supply system, adjust the book supply and storage capacity of publishing houses, adjust the warehouse configuration of logistics centers, and expand book sales opportunities. For example, Amazon's online bookstore, in order to shorten the logistics and delivery time, cooperates with printing companies to mail some books and magazines directly to readers from the printing factory. At the same time, Amazon also cooperates with publishing companies so that readers can get the books they want from distribution channels as quickly as possible. By sharing customer data with suppliers, artificial intelligence technology can analyze readers' needs in a timely manner, make predictions and judgments for publishing companies and bookstores, and make the best decisions to improve business operation efficiency.

5.2 Coordination and sharing of cross-industry cooperation

In the interpretation of the concept of media integration in China, the "central kitchen" in the delivery method of dishes is also used to describe the process of "one collection, multiple generations, and multiple dissemination" implemented by the all-media platform. How to build a "central kitchen" for publishing? In the supply chain field of publishing and distribution, the intervention of the fusion platform is also required. On the one hand, the same platform can complete the aggregation and processing of system data to the greatest extent, and on the other hand, the integrated platform can

also provide an intermediary for the supply chain management. Through the introduction of artificial intelligence technology, the maximization of supply chain management efficiency, intelligence, and automation can be achieved. In addition, with the continuous development of China's publishing industry, the expansion of China's publishing industry overseas involves books, institutions, and many other fields, and has achieved good results. However, if the Chinese publishing industry wants to further enhance its international communication capabilities and participation in the international market, it is necessary to carry out overseas empowerment of the supply chain. Corresponding to this is the participation of foreign resources on the nodes of the domestic publishing supply chain, which puts forward new requirements for the data standards of China's publishing supply chain to be in line with international standards. Therefore, the supply chain of publishing companies should take precautions and layout a shared ecology in advance, so as to provide new ideas and new attempts for the coordination of the supply chain.

5.3 Forced by technology and mechanism: talent training

Technology is the primary productive force, and talents are the pioneering force in technology. The habit of thinking of fixed-income print media in the traditional publishing industry is obviously outdated under the new situation of "Internet plus publishing" and "Internet plus supply chain". The traditional industry's emphasis on the cultivation and maintenance of authors and editors is more of a thinking based on the publishing industry. But under the new situation, more technology is involved in the field of reading. Publishing companies need to make adjustments if they want to stick to their culture in the face of fierce competition. The management of the supply chain is not only to improve the work efficiency of enterprises and reduce operating costs but also to better serve readers through active adjustment and overall planning of production factors, which is also an important measure to implement "reader-oriented". Under this circumstance, the publishing industry must widely absorb talent resources with diversified technologies in order to ensure the healthy ecological operation of the publishing industry. In the fiercely competitive business environment, the publishing industry needs to reform the talent team, optimize the personnel structure, and firmly establish the awareness of supply chain management.

6. Discussion and Conclusion

As American economist Parag Khanna said in "Connectography: Mapping the future of global civilization", "Finally, the geopolitical contest is shifting from territorial to connectivity, mainly manifested as a tug-of-war game in the global supply chain, energy market, industrial production, and the flow of finance, technology, knowledge, and talent. The tug-of-war game means the transition from the competition within the system (capitalism to communism) to the competition within the supply chain system" (Parag Khanna, 2016). The supply chain will become a new bargaining chip for the publishing industry to deal with competition and a new resource for international communication. Under the new development philosophy, publishing companies should improve the information sharing of the supply chain within the enterprise and promote the healthy development of the

publishing industry by enhancing the awareness of supply chain management, innovating supply chain management technology, and cultivating supply chain management talents.

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